ATLANTIS

Plato's Atlantis Revisited
A Geographical Evaluation of the Lake Izabal Hypothesis

Manfred Kamp

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The Lake Izabal Hypothesis
A Geographical Reassessment of Plato's Atlantis

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Preface

The question of whether Plato's account of Atlantis preserves the memory of a real geographical location has fascinated scholars for more than two millennia. Historians, archaeologists, geologists, linguists, and philosophers have proposed numerous hypotheses, yet no consensus has emerged regarding the location—or even the historical existence—of Atlantis.

The present study does not seek to resolve this longstanding debate by asserting a definitive answer. Instead, it adopts a different methodological approach. Rather than beginning with a preferred location, it starts with Plato's own descriptions. Every measurable geographical, topographical, and dimensional criterion contained in the *Timaeus* and *Critias* is examined systematically and compared with modern geographical, geological, and geophysical data.

The research presented in this volume is based on the life's work of the German mathematician **Joachim Rittstieg (†2014)**. Over more than four decades, his investigations into the chronology of the Maya calendar and numerous research journeys throughout Central America led him to recognize a series of remarkable geographical correspondences between Plato's descriptions and the region surrounding Lake Izabal in eastern Guatemala.

Rittstieg's work combined mathematical analysis with observations from geography, geology, archaeology, and historical sources. His central hypothesis was that the Lake Izabal region satisfies an unusually large number of the measurable criteria described by Plato. He regarded these correspondences not as proof of Atlantis, but as evidence that this region deserved serious interdisciplinary investigation.

Acknowledgements

This book is based on the extensive research conducted over several decades by the late mathematician **Joachim Rittstieg**, whose investigations into the Maya calendar and the geographical interpretation of Plato's Atlantis provided the foundation for the present study. His dedication to interdisciplinary research and his willingness to challenge established assumptions made this work possible.

The editor also wishes to express sincere gratitude to the researchers, geologists, archaeologists, and institutions whose published work and professional expertise contributed to the evaluation presented in this volume. Particular appreciation is extended to those who supported geological and geophysical investigations in the Lake Izabal region of Guatemala.

Special thanks are due to the indigenous communities of Central America, whose cultural traditions and historical perspectives continue to enrich our understanding of the region's past.

Finally, the author acknowledges that the Lake Izabal hypothesis remains a scientific working hypothesis. It is hoped that future archaeological, geological, and interdisciplinary research will further test, refine, or challenge the ideas presented in this book, in keeping with the principles of open scientific inquiry.

Following Joachim Rittstieg's death in 2014, the rights to his research materials and unpublished manuscripts were transferred to **Manfred Kamp**. The present volume is based upon those materials, which have been reorganized, critically revised, expanded, and translated into English to meet the standards of an international scientific readership. Wherever possible, speculative conclusions have been distinguished from verifiable observations, and unsupported assertions have been avoided. The intention has been to preserve the original ideas while presenting them within a transparent and academically balanced framework.

The study does not claim to demonstrate that Atlantis existed, nor does it claim that the Lake Izabal region can be identified conclusively as Plato's Atlantis. Rather, it argues that the geographical correspondence between Plato's descriptions and this region is sufficiently remarkable to justify further archaeological, geological, geophysical, and historical investigation.

Ultimately, the validity of the Lake Izabal hypothesis can only be determined through future empirical research. Whether the observed correspondences represent historical reality, cultural memory, or coincidence remains an open scientific question.

It is hoped that this volume will encourage renewed interdisciplinary discussion and contribute to a more systematic evaluation of one of antiquity's most enduring geographical mysteries.

About the Authors

Joachim Rittstieg (1936 - 2014†) was a German mathematician whose research focused for more than forty years on the chronology of the Maya calendar. Through his own mathematical analyses, he developed an alternative chronological reconstruction intended to correlate the Maya calendar with the modern calendar system.

Between 1971 and 1977, Rittstieg lived in Central America and subsequently returned to the region on numerous research expeditions. During these investigations, he collected geographical, geological, historical, and archaeological observations that led him to propose a possible connection between the Lake Izabal region of Guatemala and Plato's description of Atlantis.

Rittstieg further developed this hypothesis by comparing Plato's geographical measurements with the topography of the Lake Izabal region and by incorporating geological and historical evidence that he considered relevant to the question of Atlantis.

Before his death in 2014, Joachim Rittstieg transferred the rights to his research materials and their publication to **Manfred Kamp**, who prepared and revised the present work for publication.

Manfred Kamp has devoted more than four decades to the study of historical traditions, comparative cultural history, ancient chronologies, and the intellectual history of civilizations. His research interests include the history of esoteric traditions, the philosophy of science, ancient cosmologies, and the cultural heritage of Indigenous peoples of the Americas.

For more than thirty years, he has maintained close contacts with Indigenous communities in North, Central, and South America, particularly in Mexico and Guatemala. These long-standing exchanges have contributed to his interest in the historical traditions, oral histories, and cultural heritage of Mesoamerica.

Kamp also worked for many years as an advisor to management organizations, consulting firms, and universities of applied sciences, where he participated in interdisciplinary working groups concerned with strategic planning and organizational development.

Following the death of the German mathematician **Joachim Rittstieg** in 2014, Manfred Kamp assumed responsibility for preserving, organizing, and publishing Rittstieg's research. The present volume represents a scientifically revised and expanded edition of that work, prepared for an international readership while preserving the original research approach.

Beyond his editorial work, Manfred Kamp is committed to promoting awareness of the cultural heritage and historical traditions of the Indigenous peoples of the Americas.

Additional information on the history of the research project is available at **www.edda-online.de**.

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Main Text

Chapter 1 – Introduction

1.1 Background

The Atlantis narrative contained in Plato's dialogues *Timaeus* and *Critias* has attracted scholarly attention for more than two millennia. Interpretations range from viewing Atlantis as a purely philosophical allegory to attempts at identifying an actual historical civilization underlying the account.

Numerous locations have been proposed as possible sites of Atlantis, including the Aegean, the Atlantic islands, the Mediterranean basin, and various regions throughout Europe, Africa, and the Americas. Despite extensive scholarly debate, no consensus has emerged regarding the geographical location described by Plato.

A recurring problem in Atlantis research is the tendency to focus on isolated aspects of the narrative while disregarding others. Some hypotheses emphasize geological catastrophes, whereas others concentrate primarily on linguistic, archaeological, or cultural similarities. Consequently, many proposed locations satisfy only a limited portion of Plato's overall description.

The present study adopts a different methodological approach. Rather than beginning with a predetermined location, it evaluates the complete set of measurable geographical criteria contained in the dialogues. These include the dimensions of the surrounding plain, distances to the sea, adjacent mountain systems, navigable waterways, enclosed inland basins, and the reported characteristics of the capital city.

The central research question is therefore:

Can a modern geographical region be identified that simultaneously satisfies the majority of the geographical and dimensional criteria described in Plato's account of Atlantis?

To address this question, Plato's geographical descriptions are analyzed using a systematic comparative methodology. Ancient units of measurement are converted into modern metric values and compared with present-day geographical, geological, and topographical data. The objective is not to demonstrate the historical existence of Atlantis, but rather to assess the geographical plausibility of proposed locations using reproducible and measurable criteria.

By adopting this approach, the study seeks to contribute to the broader discussion concerning the relationship between ancient literary traditions, historical memory, and physical geography. If a region can be shown to satisfy a substantial number of Plato's independent geographical criteria simultaneously, it may warrant further interdisciplinary investigation through archaeology, geology, geophysics, and historical research.

Chapter 2 – Methodology

2.1 Source Analysis

The primary sources examined in this study are Plato's dialogues *Timaeus* and *Critias*.[1] Only geographical and topographical statements that can be interpreted quantitatively or spatially are considered in the principal analysis.

Mythological, religious, political, and philosophical elements of the dialogues are treated separately and are not employed as primary criteria for geographical identification. This methodological distinction is intended to minimize interpretative bias and to focus exclusively on objectively comparable spatial information.

2.2 Conversion of Ancient Units of Measurement

Measurements expressed in stadia, plethra, and feet are converted into modern metric units using conversion factors that are generally accepted in Classical Studies and ancient metrology.

Since ancient units of measurement were not completely standardized throughout the Greek world, all converted values should be regarded as approximations rather than exact measurements. For the purposes of this study, a conversion factor of approximately **180 meters per stadion** is adopted, representing a value commonly employed in modern classical scholarship.

The resulting dimensions provide a practical framework for comparison with contemporary geographical data while acknowledging the inherent uncertainties associated with ancient measurement systems.

2.3 Geographical Comparison

The converted measurements are systematically compared with modern maps, satellite imagery, topographical surveys, bathymetric data, and published geological information.

The analysis focuses on the following geographical criteria:

- Dimensions of the surrounding plain.
- Extent of adjacent mountain systems.
- Presence of navigable waterways.
- Relationship between inland water bodies and the sea.
- Dimensions of the described central basin.
- Relative location of the proposed capital city within its surrounding landscape.

Each criterion is evaluated independently before considering the cumulative geographical correspondence between Plato's descriptions and the proposed study area.

[1] [1] „ABC of the Maya“, Joachim Rittstieg, Pages 137 – 150, Eigenverlag Manfred Kamp 2022, www.edda-online.de
Platon, Aristokles „Polis ATLANTIS“ ca. 348 v. Chr. (-/100-160) s. Donnelly, S. 8-34

2.4 Evaluation Criteria

A geographical region is considered a potential candidate only if it satisfies multiple independent criteria simultaneously.

The presence of a single corresponding feature is not regarded as sufficient evidence for identification. Greater significance is assigned to locations where numerous dimensional, topographical, geological, and hydrological characteristics occur together in a mutually consistent geographical framework.

Accordingly, the results obtained through this methodology are interpreted as indicators of **geographical plausibility** rather than proof of historical identity.

This distinction is fundamental to the present study. Geographic correspondence alone cannot demonstrate that a particular location represents Plato's Atlantis. Instead, it provides a structured basis for assessing whether a proposed region merits further investigation through independent archaeological, geological, geophysical, and historical research.

Chapter 3 – Geographical Analysis of Plato's Measurements

3.1 General Considerations

One of the most remarkable characteristics of Plato's account of Atlantis is the unusually large number of quantitative geographical descriptions. Unlike many mythological narratives, the dialogues contain specific measurements relating to distances, plains, waterways, mountain ranges, and urban structures.

If these measurements were intended to describe an actual geographical setting, they should, at least in principle, be comparable with modern topographical data. Although uncertainties remain concerning the precise length of the ancient Greek stadion, the reported dimensions nevertheless provide a useful framework for evaluating geographical plausibility.

For the purposes of the present study, a conversion factor of approximately **180 meters per stadion** is adopted. This value falls within the range commonly accepted in Classical Studies and permits direct comparison with modern geographical measurements.

The objective is not to establish exact numerical equivalence but rather to determine whether the overall spatial relationships described by Plato correspond to an identifiable geographical landscape.

3.2 Dimensions of the Plain

According to *Critias*, the capital of Atlantis was situated within a vast plain enclosed by mountains while remaining open toward the sea.

Plato describes this plain as extending approximately **2,000 stadia inland** and **3,000 stadia along its greatest length**.

Using the adopted conversion factor:

- **2,000 stadia ≈ 360 km**
- **3,000 stadia ≈ 540 km**

These dimensions are exceptionally large and immediately exclude many proposed Atlantis locations within the Mediterranean basin, where no comparable mountain-enclosed plain exists.

In contrast, the broader region surrounding Lake Izabal in eastern Guatemala exhibits a geographical configuration in which extensive lowlands are bordered by major mountain systems while maintaining direct access to the Caribbean Sea through a navigable waterway.

Although the correspondence is not exact, the overall dimensions are broadly consistent with the scale described by Plato.

It is important to emphasize that this similarity should be interpreted as evidence of geographical compatibility rather than historical identity.

3.3 Mountain Systems

Plato further describes a continuous mountain range surrounding the plain and extending toward the sea.

The relevant passage suggests a mountain system measuring approximately **3,000 stadia** in length.

Converted into modern units:

3,000 stadia ≈ 540 km

The mountain systems associated with the **Sierra de las Minas**, **Sierra de Santa Cruz**, and adjacent highlands form an extensive geographical barrier whose overall dimensions are broadly comparable with Plato's description.

The significance of this observation lies less in exact numerical agreement than in the simultaneous occurrence of two independent geographical characteristics:

- an extensive enclosed plain,
- and an adjacent mountain system of comparable scale.

Such combinations are relatively uncommon and therefore constitute an important element of the present geographical assessment.

3.4 The Inland Waterway System

One of the most frequently overlooked aspects of Plato's account is the relationship between the sea, a navigable waterway, and a large inland body of water.

The dialogues describe a route by which ships could travel from the sea into a protected harbor associated with the capital.

The Lake Izabal region exhibits a remarkably similar geographical configuration through the **Río Dulce**, which connects Lake Izabal directly with the Caribbean Sea.

This system consists of:

- an open marine approach,
- a relatively narrow navigable channel,
- an intermediate basin (El Golfete),
- and a large inland lake.

The sequence closely resembles the general structure described by Plato for the maritime approach to Atlantis.

Whether this correspondence reflects historical reality or represents a geographical coincidence cannot be determined on geographical evidence alone.

Nevertheless, it constitutes one of several independent observations supporting the geographical plausibility of the proposed location.

3.5 The Navigable Canal

Plato provides dimensions for the navigable waterway leading toward the capital.

The reported length is approximately **50 stadia**.

Using the adopted conversion factor:

50 stadia ≈ 9 km

Modern measurements of the narrower navigable section within the Río Dulce system yield dimensions of the same general order of magnitude.

Although uncertainties remain concerning the precise interpretation of Plato's text, the similarity between the reported and observed measurements is noteworthy.

The canal dimensions therefore represent one of several quantitative correspondences identified during the present investigation.

3.6 The Central Basin

The Atlantis narrative further describes a central water-surrounded area associated with the capital city.

Based on Plato's dimensions for the concentric rings and surrounding waterways, the overall diameter of the central basin can be reconstructed at approximately **23 km**.

Modern measurements indicate that the shorter axis of Lake Izabal is of a comparable magnitude.

Among the numerical observations presented in this study, this represents one of the strongest dimensional correspondences.

Nevertheless, dimensional similarity alone cannot establish historical identity.

Independent archaeological evidence would be required before any definitive conclusions could be drawn.

3.7 Interim Assessment

The comparison between Plato's geographical measurements and the Lake Izabal region reveals several noteworthy correspondences:

- the dimensions of the surrounding plain,
- the extent of adjacent mountain systems,
- the presence of a navigable connection to the sea,
- the dimensions of the reported canal,
- and the scale of the central inland basin.

None of these observations, considered individually, constitutes proof of historical identity.

Taken together, however, they suggest that the Lake Izabal region satisfies an unusually large number of Plato's measurable geographical criteria within a single coherent landscape.

This cumulative pattern distinguishes the proposed location from many previously suggested Atlantis candidates and provides a strong basis for further interdisciplinary investigation.

The following chapter therefore examines the proposed topographical reconstruction of the capital itself and evaluates whether the city's reported layout can be reconciled with the geological history of the Lake Izabal region.

Chapter 4 – Topographical Reconstruction of the Proposed Capital

4.1 Introduction

One of the most distinctive features of Plato's Atlantis narrative is the detailed description of its capital city. Unlike many ancient accounts, the dialogues provide not only geographical information concerning the surrounding landscape but also quantitative descriptions of the city's internal structure.

According to Plato, the capital was situated upon a low hill surrounded by alternating concentric rings of land and water. These rings formed an integrated system serving defensive, ceremonial, and maritime purposes, while the city itself was connected to the sea through a navigable waterway.

The objective of this chapter is to examine whether the Lake Izabal region contains a topographical configuration that can reasonably be compared with Plato's description.

4.2 The Central Hill

According to *Critias*, the original settlement was established on a low hill located within a larger water-surrounded landscape.

Plato describes this feature as:

"a low hill, not very high on any side."

This description is significant because it excludes both prominent mountain peaks and extensive upland plateaus. Instead, it suggests a modest elevation rising from an otherwise relatively flat environment.

Geophysical investigations reported by the author indicate the presence of a submerged structural elevation within the Lake Izabal basin. Its position approximately corresponds to the location predicted from Plato's reported measurements.

If this feature existed above the water surface during antiquity, it could, in principle, correspond to Plato's description of a centrally located elevated area surrounded by water.

At present, however, no archaeological excavation has confirmed human occupation of this structure. Consequently, its identification with Plato's capital must remain hypothetical.

4.3 Distance from the Shore

Plato states that the central hill was located approximately **sixty stadia** from the sea.

Using the conversion adopted throughout this study:

- **60 stadia ≈ 10.8 km**

This measurement is noteworthy because of its unusual precision.

When projected onto the proposed reconstruction, the calculated distance places the central feature within the Lake Izabal basin at a location broadly consistent with Plato's reported dimensions.

Although uncertainties in both the ancient measurements and the modern reconstruction remain unavoidable, the correspondence falls within a range that justifies further investigation.

4.4 The Concentric Ring Structure

Perhaps the most famous element of Plato's Atlantis narrative is the arrangement of alternating concentric rings of land and water surrounding the central island.

Plato provides detailed measurements for the widths of these rings.

Using the adopted stadion conversion, the configuration can be reconstructed approximately as follows:

Feature	Approximate Width
Central island	900 m
Inner water ring	180 m
First land ring	360 m
Second water ring	360 m
Second land ring	540 m
Outer water ring	540 m

The resulting configuration forms a highly structured circular complex.

For many researchers, the apparent uniqueness of this arrangement has long represented one of the greatest obstacles to identifying a real geographical location corresponding to Plato's account.

Within the framework of the Lake Izabal hypothesis, these rings are not interpreted as entirely artificial canals but rather as geomorphological structures that may have originated through volcanic or tectonic processes and were subsequently modified by human activity.

This interpretation remains speculative. Nevertheless, geological processes capable of producing concentric landforms are well documented in other regions of the world and therefore provide a plausible natural mechanism worthy of investigation.

According to documentation made available through the **Guatemalan Ministry of Energy and Mines**, together with geophysical surveys conducted by the research vessel **MS *Petty Ray***, concentric subsurface volcanic structures have reportedly been identified beneath the sediments of Lake Izabal.

Independent geophysical analyses carried out by **Dr. Bosse** and colleagues at the Geophysical Institute in Hanover[2] have likewise been reported to indicate three concentric ring structures surrounding a central elevated feature beneath approximately 10 meters of water and 10 meters of sediment.

These observations are of considerable interest because the reported dimensions are broadly consistent with those described by Plato. However, the underlying data have not yet been subjected to comprehensive peer-reviewed publication or independent archaeological verification. Consequently, they should presently be regarded as preliminary evidence requiring further investigation.

4.5 The Harbour System

Plato repeatedly emphasizes the maritime importance of the capital.

Rather than describing an isolated inland settlement, the dialogues portray Atlantis as a major harbor city accessible to large vessels.

A particularly noteworthy aspect of the account is that ships reached the city through a protected inland waterway rather than directly from the open sea.

Within the proposed reconstruction, the navigation route consists of:

[2] Dr. Bosse and colleagues from Geophysikalischen Institute Hanover, 1987

1. The Caribbean Sea
2. The Gulf of Honduras
3. El Golfete Basin
4. The Río Dulce
5. Lake Izabal
6. The proposed central harbor

This sequence closely corresponds to Plato's description of a sheltered maritime approach and may explain his statement that ships entered the city "as into a harbor."

Whether this similarity reflects historical reality or geographical coincidence remains uncertain.

4.6 The Causeway Connection

Plato describes a land connection linking the central island with the surrounding mainland.

According to the reconstruction proposed in this study, this connection would have extended approximately **nine kilometers**.

The author reports the existence of linear topographical features and possible structural remains within the region that may indicate the former presence of an artificial causeway.

At present, however, these observations remain anecdotal and have not been verified through systematic archaeological investigation.

Accordingly, the causeway hypothesis should be regarded as a preliminary interpretation rather than an established conclusion.

4.7 Strategic Location

Regardless of the Atlantis question, the proposed site possesses several characteristics that would have favored trade, communication, and defense in antiquity.

These include:

- direct access to maritime trade routes,
- control of inland transportation networks,
- natural protection provided by surrounding waters,
- limited approaches suitable for defense,
- proximity to mineral resources within neighboring mountain ranges,
- and the presence of adjacent hot and cold mineral springs, today known as **Río Agua Caliente** and **Río Sumache**.

Such characteristics are consistent with the description of a prosperous regional center.

They do not demonstrate that the site was Atlantis. Rather, they illustrate why an important settlement could plausibly have developed in this location.

4.8 Interim Assessment

The proposed topographical reconstruction identifies several features within the Lake Izabal region that correspond, at least in general form, to Plato's description of the capital:

- a centrally located elevated feature,
- a large surrounding basin,

- navigable access from the sea,
- possible concentric geological structures,
- a strategically advantageous location,
- and a potential land connection to the surrounding mainland.

Although these correspondences are noteworthy, none presently constitutes conclusive proof.

The absence of excavated urban remains the principal limitation of the hypothesis.

The following chapter therefore examines whether the geological history of the region provides mechanisms capable of explaining the environmental changes described in Plato's account of the destruction of Atlantis.

Chapter 5 – Geological Considerations and Catastrophic Events

5.1 Introduction

One of the central elements of Plato's Atlantis narrative is the destruction of the city by a catastrophic natural event involving earthquakes and floods. According to the account, Atlantis disappeared within a relatively short period and subsequently became inaccessible.

Regardless of whether the narrative is interpreted as historical memory, literary construction, or a combination of both, any proposed location must be evaluated within the context of its geological history.

The purpose of this chapter is therefore not to prove Plato's account but to examine whether the geological evolution of the Lake Izabal region is compatible with the environmental changes described in the dialogues.

5.2 Regional Geological Setting

The Lake Izabal Basin is situated within one of the most tectonically active regions of the Western Hemisphere.

The area is influenced by the interaction of several major tectonic structures, including:

- the North American Plate,
- the Caribbean Plate,
- and associated fault systems extending across Central America.

The most significant regional structure is the **Motagua Fault System**, which forms part of the plate boundary between the North American and Caribbean plates.

Throughout geological history, this fault system has experienced repeated episodes of displacement and remains tectonically active today.

Consequently, the region is characterized by:

- frequent seismic activity,
- crustal deformation,
- tectonic basin formation,
- fault-controlled drainage systems,
- and localized vertical ground movements.

These characteristics distinguish the Lake Izabal region from many alternative Atlantis candidates located within comparatively stable geological environments.

5.3 Formation of the Lake Izabal Basin

Current geological research indicates that the Lake Izabal depression originated through tectonic processes associated with fault movements and crustal subsidence.

The modern lake occupies a structural basin whose development has been controlled by long-term tectonic activity.

This observation is particularly relevant because Plato's narrative implies significant environmental changes affecting both landscape morphology and regional water levels.

A tectonically active basin provides a plausible geological mechanism through which substantial

landscape modifications could have occurred over extended periods.

Nevertheless, geological plausibility alone does not establish a historical connection with Atlantis.

Comparable tectonic basins occur in many parts of the world and therefore cannot, by themselves, identify a specific location.

5.4 Evidence for Vertical Crustal Movements

One of the principal geological questions raised by the Atlantis narrative concerns the possibility that portions of the landscape experienced measurable subsidence.

Geological investigations throughout the Caribbean region demonstrate that repeated episodes of vertical crustal movement occurred during the Quaternary Period.

Such movements may result from:

- fault displacement,
- tectonic adjustment,
- sediment loading,
- volcanic processes,
- or combinations of these mechanisms.

If parts of the Lake Izabal region underwent localized subsidence, formerly exposed land surfaces could have become submerged beneath the present lake.

This possibility is relevant to the Atlantis hypothesis because it provides a potential explanation for reports of submerged geological features or archaeological remains.

According to observations reported by **Professor Dr. W. Lauer**,[3] erosional evidence along the adjacent mountain front suggests that a rapid vertical displacement of approximately **40 meters** may have occurred within the regional crustal block.

Although this interpretation is of considerable interest, additional geological investigations are required before its magnitude, timing, and regional significance can be established with confidence.

At present, the available evidence supports the possibility of significant crustal movements but does not demonstrate a direct relationship with Plato's Atlantis.

5.5 Volcanic and Geothermal Activity

Central America is characterized by widespread volcanic and geothermal activity.

Although the Lake Izabal Basin itself is not dominated by active volcanoes, volcanic processes have played an important role in shaping the surrounding geological landscape.

Several interpretations of Plato's Atlantis have proposed that concentric landforms may have originated through volcanic or tectonic mechanisms.

Such hypotheses remain speculative.

Nevertheless, geological processes capable of producing circular or semicircular structural features are well documented elsewhere and therefore cannot be excluded on geological grounds alone.

The presence of nearby geothermal springs further demonstrates that hydrothermal activity has influenced the broader region throughout its geological history.

[3] Prof. Dr. W. Lauer „Geographischen Institute of the University Bonn“, 2003

5.6 Earthquakes and Catastrophic Flooding

Plato explicitly attributes the destruction of Atlantis to earthquakes and catastrophic floods.

From a geological perspective, several natural mechanisms are capable of producing comparable environmental effects, including:

1. Major earthquakes.
2. Tsunamis.
3. Sudden changes in river systems.
4. Coastal flooding.
5. Localized tectonic subsidence.
6. Combined tectonic and hydrological disturbances.

The Caribbean region has experienced all of these processes during various periods of its geological history.

Consequently, the environmental scenario described in Plato's account is not inconsistent with the known geological behavior of the region.

However, there is presently no direct geological evidence demonstrating that a single catastrophic event corresponding to Plato's description occurred at the proposed location.

This distinction is crucial.

Geological possibility must not be confused with geological proof.

5.7 Submerged Structures and Their Interpretation

Reports have occasionally described submerged anomalies, linear stone formations, and possible structural remains within parts of the Lake Izabal system.

Such observations are potentially significant but require careful interpretation.

Natural geological formations may resemble artificial constructions, particularly when observed through sonar imagery or limited underwater surveys.

The identification of submerged archaeological remains requires:

- systematic mapping,
- controlled excavation,
- material analysis,
- absolute dating,
- and independent verification.

Until such investigations have been completed, interpretations of submerged urban structures must remain provisional.

Accordingly, these observations should be regarded as hypotheses requiring further scientific examination rather than established archaeological evidence.

5.8 Comparison with Plato's Catastrophe Narrative

The geological characteristics of the Lake Izabal region exhibit several features broadly consistent with Plato's description of environmental catastrophe, including:

- tectonic activity,
- possible crustal subsidence,
- seismic hazards,
- changing hydrological systems,
- and long-term landscape evolution.

These observations demonstrate that the proposed region possesses the geological capacity to undergo substantial environmental transformation.

Whether these processes correspond to the specific events described in Plato's narrative remains uncertain.

The available evidence supports geological plausibility but does not constitute historical confirmation.

5.9 Interim Assessment

The geological evidence examined in this chapter supports three principal conclusions:

1. The Lake Izabal region is geologically dynamic and has experienced significant environmental change throughout its history.

2. Several geological processes described in Plato's catastrophe narrative are compatible with the known tectonic evolution of the region.

3. No currently available geological evidence conclusively demonstrates that the Atlantis event occurred within the Lake Izabal Basin.

Accordingly, geology neither proves nor disproves the Lake Izabal hypothesis.

Instead, it demonstrates that the proposed location remains compatible with the environmental processes described in Plato's account.

The following chapter evaluates historical, linguistic, and cultural evidence that has been cited in support of the hypothesis, while critically examining both its strengths and its limitations.

Chapter 6 – Historical, Linguistic, and Cultural Evidence

Evaluating Historical, Linguistic, and Cultural Arguments and Their Limitations

6.1 Introduction

In addition to geographical and geological considerations, several historical, linguistic, and cultural observations have been cited in support of the Lake Izabal hypothesis.

These lines of evidence differ fundamentally from the quantitative analyses presented in the preceding chapters. Whereas geographical measurements can be directly compared with modern topography, linguistic and cultural interpretations generally involve a considerably greater degree of uncertainty.

Accordingly, the evidence discussed in this chapter should be regarded as supplementary rather than primary. Its purpose is not to establish proof but to provide additional context within which the geographical hypothesis may be evaluated.

6.2 The Historical Transmission of the Atlantis Narrative

According to Plato, the story of Atlantis originated with Egyptian priests, was transmitted to Solon, and subsequently passed through several intermediaries before reaching Plato.

The historical reliability of this chain of transmission remains the subject of ongoing scholarly debate.

Three principal interpretations have been proposed:

1. Atlantis represents an entirely fictional creation by Plato.
2. The narrative preserves distorted memories of genuine historical events.
3. The account combines historical traditions with philosophical and literary elements.

The present study does not attempt to resolve this long-standing debate.

Instead, it investigates whether the geographical information preserved within the narrative can be systematically compared with real-world locations, regardless of the ultimate origin of the tradition.

6.3 Linguistic Considerations

Several authors have proposed linguistic similarities between names occurring in Mesoamerican traditions and terminology associated with Atlantis.

Particular attention has been given to the possible relationship between the term **"Atlan"** and the Greek name **Atlantis**.

Such observations are potentially interesting but require careful interpretation.

Modern historical linguistics normally requires:

- documented linguistic development,
- intermediate forms,
- regular phonetic correspondences,
- chronological consistency,
- and independent corroborating evidence.

At present, no generally accepted linguistic demonstration exists linking the Greek name *Atlantis* with indigenous languages of Central America.

Consequently, any proposed relationship should presently be regarded as a hypothesis rather than an

established linguistic conclusion.

6.4 Indigenous Traditions and Oral History

Numerous indigenous traditions throughout Central America contain narratives describing:

- ancient floods,
- vanished settlements,
- ancestral migrations,
- submerged landscapes,
- and catastrophic natural events.

Such traditions constitute valuable components of regional cultural history and may preserve memories of past environmental change.

However, oral traditions evolve over time and frequently incorporate symbolic, religious, and social elements.

For this reason, they cannot be treated as direct historical documentation without independent supporting evidence.

According to this interpretation, "POLIS ATLANTIS" means "City of ATLAN"; the element "tis" is interpreted as the Greek genitive ending.

Within the context of the present study, indigenous traditions are therefore regarded as supplementary indicators rather than primary evidence.

6.5 Metallurgy and the Question of Orichalcum

Plato describes Atlantis as possessing significant quantities of a material known as **orichalcum** (*Oreichalkos*).

Numerous interpretations have been proposed, including:

- copper alloys,
- brass-like materials,
- naturally occurring metallic compounds,
- amber,
- or purely literary symbolism.

Some researchers have suggested that metallurgical traditions in Mesoamerica may provide possible parallels.

According to analyses reported by **Professor Dr. Noveck (Frankfurt)**,[4] a reddish metallic compound containing copper, nickel, and arsenic has been identified and interpreted as corresponding to the composition **$CuNi_2As_2$**. It has been proposed that this material may be related to Plato's description of orichalcum. The reported mineral composition is potentially relevant to discussions concerning Plato's description of orichalcum, but the identification remains debated.

Furthermore, mineral deposits containing the constituent elements required for such alloys occur within the broader Lake Izabal region.

These observations are potentially relevant to the hypothesis. However, no scholarly consensus currently exists regarding the precise identity of Plato's orichalcum.

[4] Prof. Dr. Noveck, Frankfurt, **Kuniar** (= Copper-Nickel-Arsen = CuNi2As2 = **Oreichalcos = *"mital orán"***), 1984

Accordingly, the relationship between the reported mineral deposits and Plato's description should be regarded as an area requiring further archeometallurgical investigation rather than as a resolved question.

6.6 Trade Networks and Cultural Development

Archaeological evidence demonstrates that complex societies developed throughout Mesoamerica long before European contact.

These civilizations possessed:

- extensive regional trade networks,
- monumental architecture,
- sophisticated agricultural systems,
- and complex political organization.

The existence of such societies demonstrates that large-scale social organization was entirely feasible within this region.

However, this observation does not establish any direct connection with Atlantis.

Rather, it indicates that the proposed geographical setting was capable of supporting substantial population centers comparable in scale to those described in Plato's narrative.

6.7 Strengths of the Cultural Evidence

The historical and cultural observations discussed above provide several potentially significant considerations:

- long-term human occupation of the region,
- traditions associated with major environmental events,
- evidence for complex pre-Columbian societies,
- possible linguistic parallels,
- and regional metallurgical development.

Collectively, these factors increase the plausibility that important ancient settlements may once have existed within the broader Lake Izabal region.

6.8 Limitations of the Cultural Evidence

Equally important are the limitations.

At present:

- no inscription mentioning Atlantis has been discovered,
- no direct linguistic relationship has been demonstrated,
- no archaeological site has been conclusively identified as Plato's capital,
- and no independent historical document confirms the Atlantis narrative.

These limitations substantially reduce the evidential weight of the cultural material.

Consequently, the observations discussed in this chapter should not be interpreted as proof of the Lake Izabal hypothesis.

Instead, they provide contextual information that may complement the geographical and geological analyses presented earlier.

6.9 Interim Assessment

The historical, linguistic, and cultural evidence examined in this chapter neither confirms nor disproves the Lake Izabal hypothesis.

Rather, it provides a broader interpretative framework within which the geographical observations may be considered.

The strongest elements of the present study remain the measurable geographical correspondences identified in the preceding chapters.

The cultural evidence should therefore be regarded as supportive and exploratory rather than conclusive.

The following chapter compares the Lake Izabal hypothesis with the principal competing interpretations of Atlantis in order to evaluate whether it offers greater explanatory power than previously proposed locations.

Chapter 7 – Alternative Explanations and Competing Hypotheses

Comparative Evaluation of Santorini, the Azores, Tartessos, Sardinia, and the Fictional Interpretation

7.1 Introduction

Any proposed location for Atlantis must be evaluated not only on its own merits but also in comparison with competing interpretations.

A recurring weakness of many Atlantis studies is the tendency to emphasize evidence supporting a preferred location while giving comparatively little attention to alternative explanations.

The objective of this chapter is therefore to examine several of the most frequently proposed Atlantis candidates and to evaluate their correspondence with Plato's geographical description using the same methodological criteria applied throughout this study.

The comparison focuses primarily on the following measurable characteristics:

- continental setting,
- dimensions of the surrounding plain,
- dimensions of adjacent mountain systems,
- navigable access from the sea,
- presence of an inland basin,
- evidence for Pleistocene elephants and horses,
- adjacent hot and cold mineral springs,
- and the dimensions of the proposed capital region.

7.2 The Santorini (Thera) Hypothesis

One of the most influential Atlantis theories identifies Atlantis with the volcanic island of Santorini in the Aegean Sea.

Strengths

Santorini possesses several characteristics that have attracted considerable scholarly attention:

- evidence for a catastrophic volcanic eruption,
- a highly developed Bronze Age civilization,
- an advanced maritime culture,
- and the possibility that later traditions preserved memories of this disaster.

Limitations

Comparison with Plato's geographical descriptions reveals several significant difficulties.

Santorini:

- is considerably smaller than the dimensions reported in *Critias*,
- lacks the extensive enclosed plain described by Plato,
- possesses no mountain system comparable in scale,

- and does not correspond to the continental setting implied in the dialogues.

Consequently, although Santorini provides a convincing explanation for the catastrophe narrative, it satisfies only a limited number of Plato's geographical criteria.

7.3 The Azores Hypothesis

Another widely discussed proposal places Atlantis within the Azores archipelago.

Strengths

Its principal strengths include:

- a location within the Atlantic Ocean,
- extensive volcanic activity,
- and numerous submerged geological formations.

Limitations

However, the Azores lack several of Plato's principal geographical characteristics, including:

- a large rectangular plain,
- mountain systems of the reported dimensions,
- a navigable inland basin,
- and a recognizable capital configuration.

Furthermore, no archaeological evidence currently demonstrates the existence of a highly developed prehistoric civilization comparable with Plato's description.

The overall geographical correspondence therefore appears limited.

7.4 The Tartessos (Andalusia) Hypothesis

Several modern researchers have proposed southern Spain and the ancient culture of Tartessos as the historical basis of the Atlantis tradition.

Strengths

This interpretation benefits from:

- proximity to the Strait of Gibraltar,
- evidence for complex prehistoric societies,
- extensive river systems,
- and important metallurgical traditions.

Limitations

Nevertheless, several difficulties remain concerning:

- the dimensions of the surrounding plain,
- adjacent mountain systems,
- the inland basin,
- and the concentric urban layout described by Plato.

Accordingly, the geographical correspondence appears partial rather than comprehensive.

7.5 The Sardinian Hypothesis

Another group of researchers associates Atlantis with Bronze Age Sardinia and the Nuragic civilization.

Strengths

Supporting arguments include:

- impressive monumental architecture,
- maritime traditions,
- and evidence for a substantial prehistoric population.

Limitations

The geographical setting differs considerably from Plato's description.

Particularly problematic are:

- the dimensions of the surrounding plain,
- the absence of a large enclosed basin,
- and the reported spatial relationships associated with the capital.

Although Sardinia provides interesting cultural parallels, its geographical correspondence is comparatively weak.

7.6 Atlantis as Pure Fiction

An alternative interpretation maintains that Atlantis never existed as a historical place.

According to this view:

- Plato invented the narrative,
- the account serves philosophical purposes,
- and the geographical descriptions represent literary constructions rather than historical observations.

Strengths

This interpretation explains:

- the absence of unequivocal archaeological evidence,
- inconsistencies within the tradition,
- and Plato's broader philosophical objectives.

Limitations

The fictional interpretation nevertheless raises important questions.

Plato provides an unusually detailed collection of:

- numerical measurements,
- geographical descriptions,
- topographical relationships,
- and engineering features.

It therefore remains unclear why a purely fictional narrative would contain such an extensive body of quantitative geographical information.

Although literary invention remains a plausible explanation, the possibility that historical memories contributed to the narrative cannot presently be excluded.

7.7 Comparative Assessment

The principal Atlantis hypotheses can be compared according to their ability to satisfy Plato's major geographical criteria.

Criterion	Santorini	Azores	Tartessos	Sardinia	Lake Izabal
Large plain	Partial	Weak	Partial	Weak	Strong
Mountain systems	Weak	Weak	Partial	Partial	Strong
Inland basin	Weak	Weak	Partial	Weak	Strong
Navigable waterway	Partial	Weak	Strong	Partial	Strong
Dimensional correspondence	Weak	Weak	Partial	Weak	Strong
Geological activity	Strong	Strong	Moderate	Moderate	Strong
Hot and cold springs	Weak	Weak	Weak	Weak	Strong
Evidence for prehistoric elephants	Weak	Weak	Weak	Weak	Strong*

*The evidence cited for the Lake Izabal region concerns the occurrence of Pleistocene proboscidean remains in Central America and should not be interpreted as direct evidence for Atlantis itself.

This comparison is necessarily simplified and should not be regarded as definitive.

Nevertheless, it illustrates that the Lake Izabal hypothesis satisfies a comparatively large number of Plato's geographical criteria simultaneously.

7.8 Discussion

The purpose of this comparison is not to demonstrate that the Lake Izabal hypothesis is correct.

Rather, it seeks to evaluate its relative explanatory power.

An appropriate Atlantis candidate should ideally account simultaneously for:

1. Plato's reported dimensions.
2. The extensive surrounding plain.
3. Adjacent mountain systems.
4. Navigable access from the sea.
5. Geological instability.
6. The relationship between the sea, inland waters, and the capital.
7. Adjacent hot and cold mineral springs.
8. Evidence for large Pleistocene mammals.
9. The availability of mineral resources potentially associated with orichalcum.

Among the hypotheses considered here, the Lake Izabal region appears to satisfy the largest number of these criteria within a single coherent geographical setting.

Whether this reflects an underlying historical reality or an exceptional geographical coincidence remains uncertain.

7.9 The Research Gap

A review of previous Atlantis research reveals a recurring methodological pattern.

Most hypotheses concentrate on individual elements of the tradition, such as:

- volcanic destruction,
- archaeological discoveries,
- linguistic similarities,
- or historical traditions.

Relatively few studies attempt to evaluate all measurable geographical criteria described by Plato simultaneously.

The present investigation seeks to address this methodological gap by considering the complete geographical framework rather than isolated characteristics.

7.10 Interim Assessment

The comparative analysis suggests that none of the currently proposed Atlantis locations satisfies every element of Plato's description.

The Lake Izabal region, however, appears to exhibit a broader geographical correspondence than many competing hypotheses.

This observation does not establish historical identity.

It does, however, justify continued investigation of the region as a potentially significant candidate deserving further interdisciplinary research.

The following chapter examines the principal methodological limitations of the present study and identifies areas requiring additional investigation before more definitive conclusions can be drawn.

Chapter 8 – Limitations of the Study

Methodological and Evidential Constraints

8.1 Introduction

Scientific investigations require not only the presentation of supporting evidence but also a careful assessment of uncertainty and methodological limitations.

The purpose of this chapter is to examine the principal weaknesses of the Lake Izabal hypothesis and to identify areas where additional research is required.

Recognizing these limitations does not invalidate the hypothesis. Rather, it provides the framework necessary for evaluating the reliability and significance of the conclusions presented in this study.

8.2 Dependence on Ancient Sources

The present investigation relies primarily upon Plato's dialogues *Timaeus* and *Critias*.

A fundamental limitation arises from the fact that these texts constitute the only detailed ancient source describing Atlantis.

Several uncertainties therefore remain unavoidable, including:

- the accuracy of the transmission process,
- possible copying errors,
- differences among modern translations,
- and the extent to which Plato may have modified earlier traditions.

Since no independent contemporary records describing Atlantis have been identified, the original historical basis of the narrative remains uncertain.

8.3 Geographical Correspondence

One of the principal methodological criticisms concerns the possibility of coincidental geographical similarities.

Large geographical regions commonly contain combinations of:

- mountain ranges,
- plains,
- lakes,
- rivers,
- and coastal environments.

Consequently, some degree of correspondence between Plato's descriptions and modern landscapes may occur by chance.

The identification of multiple independent correspondences within a single region strengthens the hypothesis but cannot eliminate the possibility of coincidence.

This limitation must therefore be explicitly acknowledged.

8.4 Absence of Direct Archaeological Evidence

The most significant limitation of the present study is the absence of direct archaeological confirmation.

At present, no verified evidence exists for:

- the capital city described by Plato,
- monumental harbor facilities,
- concentric urban structures,
- inscriptions,
- administrative records,
- or datable architectural remains directly linking the proposed location with Atlantis.

Without such evidence, the Lake Izabal hypothesis remains primarily geographical in nature.

Future archaeological investigations are therefore essential before stronger historical conclusions can be drawn.

8.5 Cultural and Oral Traditions

The study refers to various indigenous traditions describing floods, migrations, and ancient settlements.

Although such traditions may preserve memories of historical environmental events, they present several methodological challenges:

- oral narratives change over time,
- symbolic meanings may become incorporated,
- chronological precision is often lacking,
- and independent verification is frequently difficult.

For these reasons, oral traditions cannot be regarded as primary evidence for identifying Atlantis.

Their principal value lies in providing cultural and historical context.

8.6 Requirements for Future Verification

The Lake Izabal hypothesis can only be strengthened through additional empirical investigation.

Particularly valuable avenues of future research include:

1. Systematic underwater archaeological surveys.
2. High-resolution bathymetric mapping.
3. Controlled archaeological excavations.
4. Radiometric dating.
5. Geological sediment coring.
6. Geophysical imaging.
7. Comparative linguistic investigations.
8. Independent replication of the geographical measurements.
9. Archeometallurgical investigation of mineral deposits potentially associated with Plato's description of orichalcum.

Such investigations would provide a substantially stronger empirical basis for evaluating the hypothesis.

8.7 Interim Assessment

The limitations discussed in this chapter demonstrate that the Lake Izabal hypothesis remains provisional.

The currently available evidence supports geographical plausibility rather than historical certainty.

No individual line of evidence presently demonstrates that Atlantis existed within the proposed region.

At the same time, the combination of geographical, geological, and topographical correspondences appears sufficiently noteworthy to justify continued interdisciplinary investigation.

Accordingly, the conclusions presented in this study should be interpreted as a **working hypothesis** rather than a definitive historical identification.

The final chapter summarizes the principal findings of the investigation and evaluates the broader significance of the Lake Izabal hypothesis within the context of Atlantis research.

Chapter 9 – Conclusion

The Lake Izabal Region as a Plausible Candidate Requiring Further Investigation

9.1 Objective of the Study

The objective of this study was to investigate whether the geographical descriptions contained in Plato's *Timaeus* and *Critias* can be systematically compared with a real geographical region.

Rather than beginning with a predetermined location, the investigation sought to evaluate the complete set of measurable geographical criteria preserved in the Atlantis narrative, including:

- the dimensions of the surrounding plain,
- adjacent mountain systems,
- navigable waterways,
- inland basins,
- adjacent hot and cold springs,
- evidence for prehistoric elephants,
- nearby mineral resources potentially suitable for the production of orichalcum,
- and the described configuration of the capital.

The central research question was whether any modern geographical region satisfies a substantial number of these criteria simultaneously.

9.2 Summary of the Findings

The analysis indicates that the Lake Izabal region of present-day Guatemala exhibits several noteworthy correspondences with Plato's geographical descriptions.

Among the principal observations are:

- an extensive lowland plain bordered by mountain ranges,
- dimensions broadly comparable with those reported in the dialogues,
- a navigable connection between inland waters and the Caribbean Sea,
- a basin capable of accommodating the reconstructed dimensions of the capital region,
- adjacent hot and cold mineral springs,
- nearby mineral deposits relevant to discussions concerning orichalcum,
- evidence for prehistoric proboscideans in the broader region,
- and a tectonically active geological environment capable of significant long-term landscape change.

Individually, none of these observations constitutes proof.

Collectively, however, they identify the Lake Izabal region as a geographically plausible candidate deserving further interdisciplinary investigation.

9.3 Evaluation of the Hypothesis

Compared with many previously proposed Atlantis locations, the Lake Izabal hypothesis offers several advantages.

Most notably, it attempts to explain simultaneously:

1. Plato's reported dimensions.
2. The extensive surrounding plain.
3. The adjacent mountain systems.
4. Navigable maritime access.
5. Regional geological instability.
6. The relationship between the sea, inland waters, and the capital.
7. Adjacent hot and cold mineral springs.
8. Mineral resources potentially associated with Plato's description of orichalcum.

As the comparative analysis has demonstrated, none of the principal alternative hypotheses satisfies this combination of geographical criteria to the same extent.

Nevertheless, geographical correspondence alone is insufficient to establish historical identity.

The hypothesis must therefore remain provisional.

9.4 What This Study Does Not Demonstrate

It is equally important to define the limits of the present investigation.

This study does **not** demonstrate that:

- Atlantis certainly existed;
- Plato's narrative is entirely historical;
- the Lake Izabal region was definitively Atlantis;
- or every feature described by Plato has been successfully identified.

Furthermore, no direct archaeological evidence presently confirms the existence of the capital city described in the dialogues.

For these reasons, the conclusions presented here should not be interpreted as historical proof.

9.5 Significance of the Findings

Despite these limitations, the results may nevertheless be significant.

The study demonstrates that Plato's geographical descriptions can be examined using a systematic and reproducible methodology.

Rather than treating Atlantis solely as myth or speculation, the narrative can be approached as a geographical hypothesis that is open to empirical testing.

Whether the Lake Izabal hypothesis ultimately proves correct is less important than demonstrating

that the question itself can be investigated using measurable geographical criteria.

In this respect, the present work contributes to the broader discussion concerning the relationship between ancient traditions, historical memory, and physical geography.

9.6 Recommendations for Future Research

The present investigation is intended as a starting point for further research rather than a final conclusion.

Future studies should focus on obtaining independent evidence capable of either confirming or refuting the proposed hypothesis.

Particularly important areas include:

- underwater archaeology,
- high-resolution bathymetric mapping,
- geophysical investigation,
- tectonic reconstruction,
- radiometric dating,
- archeometallurgical analysis,
- and systematic geological sampling.

The discovery of securely dated archaeological remains would be especially significant.

Such evidence would provide a substantially stronger basis for evaluating the proposed identification.

Should future geophysical surveys, archaeological excavations, or geological investigations produce new data, the models developed in this study may be confirmed, refined, or rejected.

Such openness to revision is an essential characteristic of scientific inquiry.

9.7 The Changing Nature of Atlantis Research

Earlier investigations frequently concentrated on identifying a single location that appeared to match as many elements of the Atlantis narrative as possible.

Modern research, however, benefits from analytical tools unavailable even a few decades ago.

These include:

- high-resolution satellite imagery,
- digital elevation models,
- Geographic Information Systems (GIS),
- remote sensing,
- LiDAR technology,
- geophysical prospecting,
- high-precision dating techniques,
- and numerical landscape modelling.

Together, these methods allow geographical hypotheses to be evaluated in a systematic, transparent, and reproducible manner.

9.8 Final Conclusion

The findings presented in this study suggest that the Lake Izabal region deserves consideration as a geographically coherent candidate for Plato's Atlantis.

The observed correspondences between the ancient descriptions and the modern landscape are sufficiently numerous to justify continued interdisciplinary investigation.

At present, however, the available evidence supports only a conclusion of **geographical plausibility**, not one of historical certainty.

Accordingly, the Lake Izabal hypothesis should be regarded as a **provisional research model** whose validity remains subject to future archaeological, geological, historical, and geophysical testing.

Ultimately, only new empirical evidence will determine whether the observed correspondences reflect historical reality, cultural memory, or an exceptional geographical coincidence.

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List of Figures

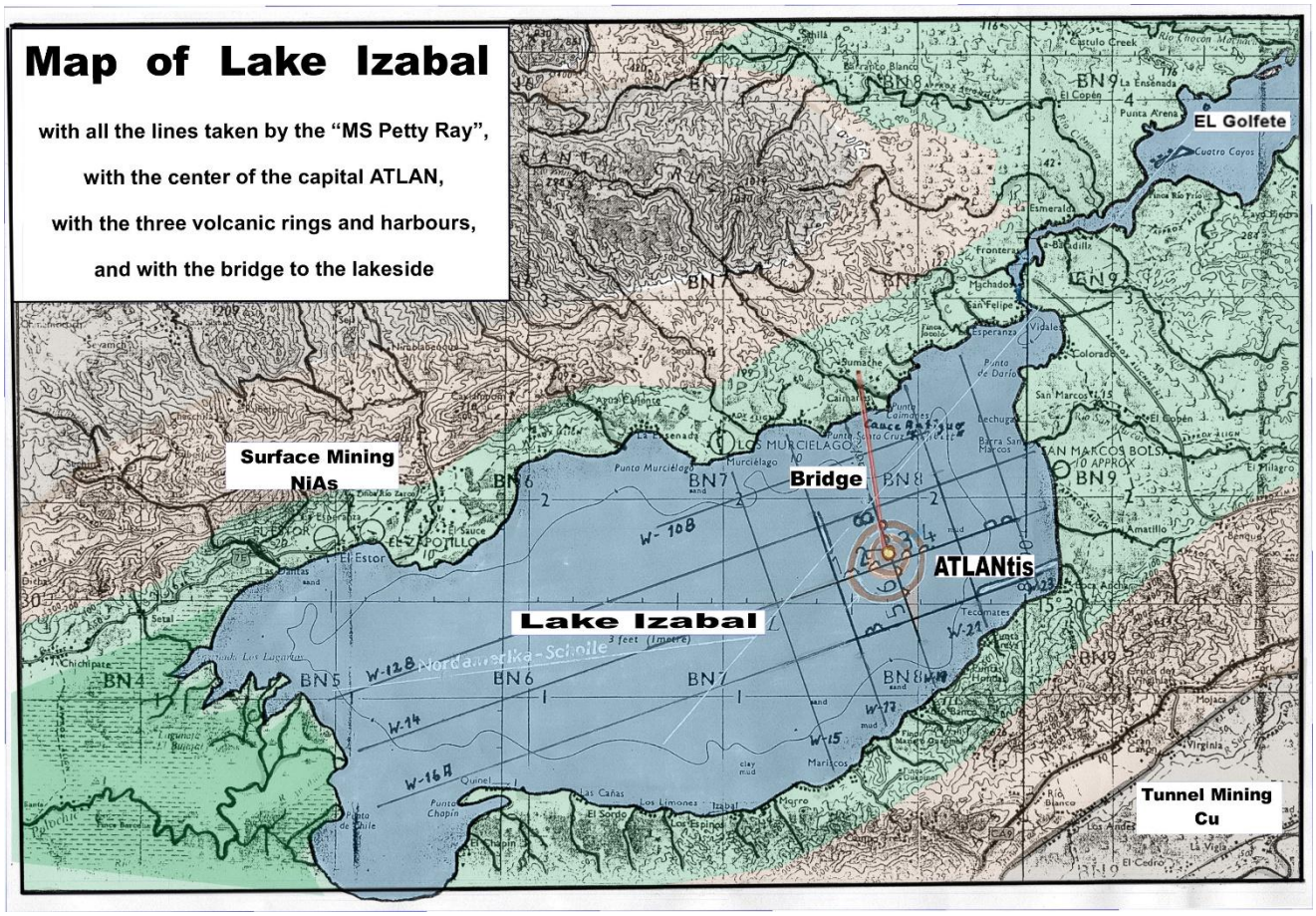

Figure 1. Location of Lake Izabal

Map of Lake Izabal showing the geophysical survey profiles.

Image Credit: Ministerio de Minas y Energía" of Guatemala

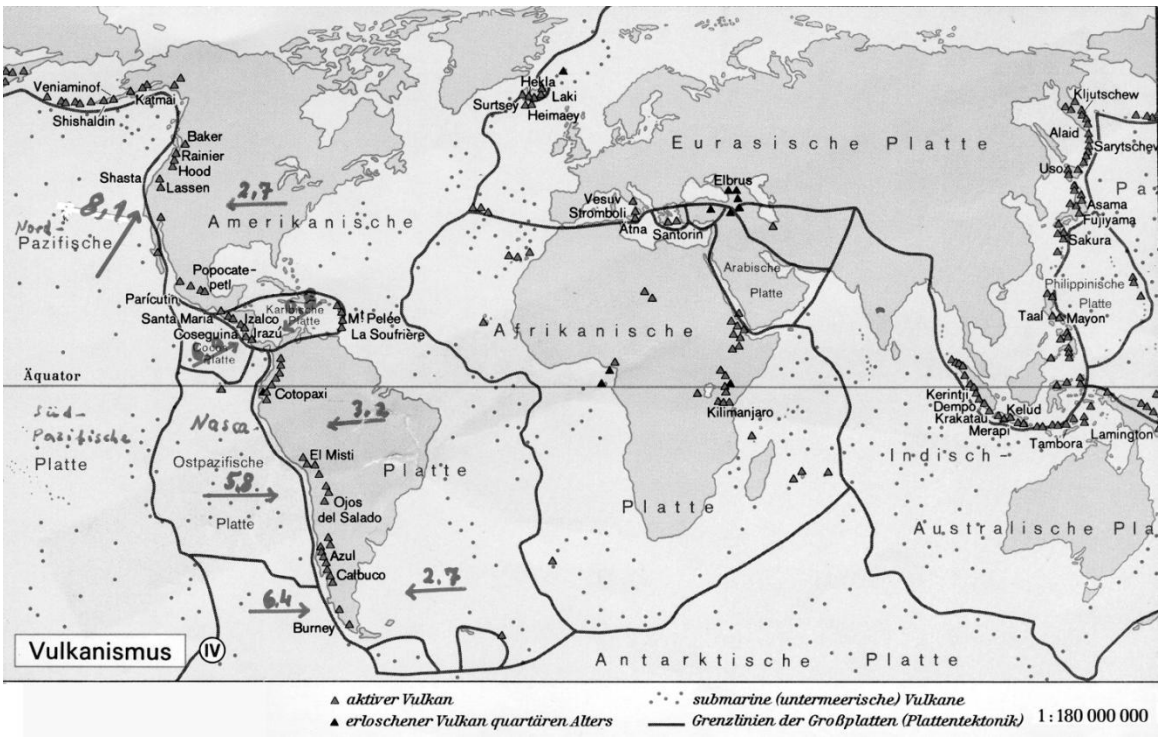

Figure 2. Regional Tectonic Setting of Central America

Map showing the principal tectonic structures of Central America.

Image Credit: Measurements of 1988 in cm / year, from "the Ministerio de Minas y Energía" of Guatemala

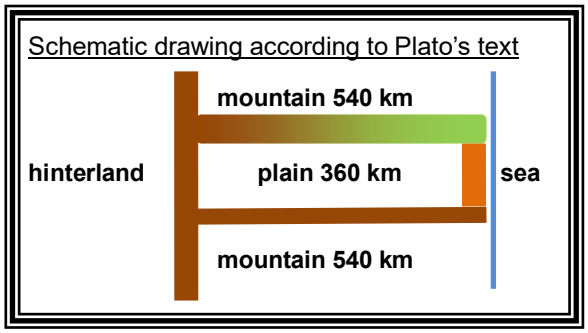

Figure 3. Proposed Reconstruction of the Atlantis Plain in the Lake Izabal Region

Geographical reconstruction based on the dimensions reported by Plato.

Image Credit: Joachim Rittstieg

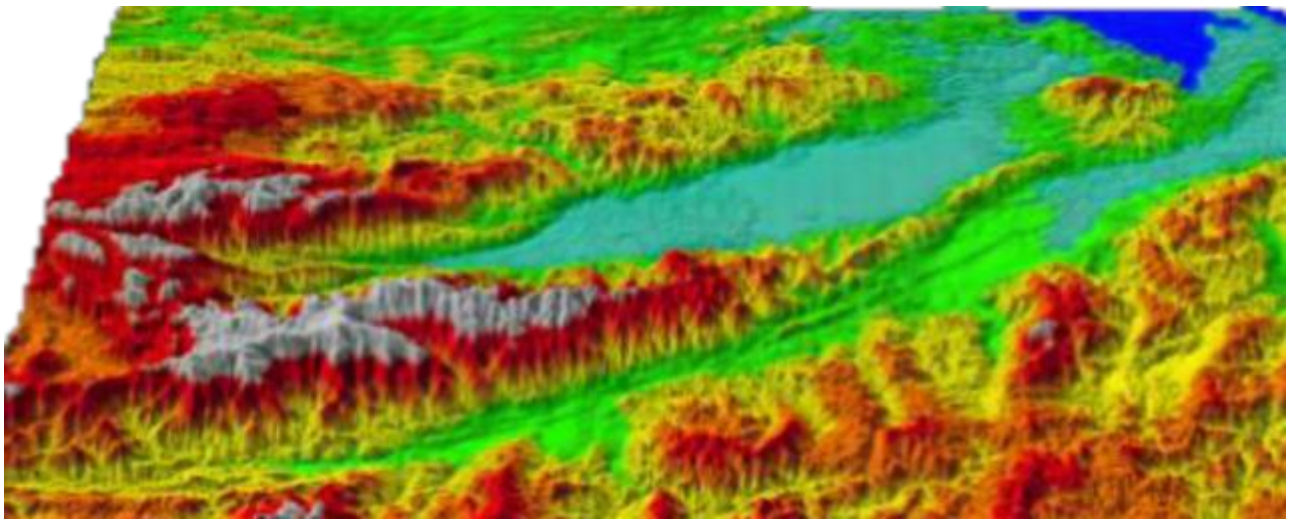

Figure 4. Mountain Systems of the Lake Izabal Region
Major mountain ranges associated with the proposed Atlantis plain.

Image Credit: EOSDA Land viewer

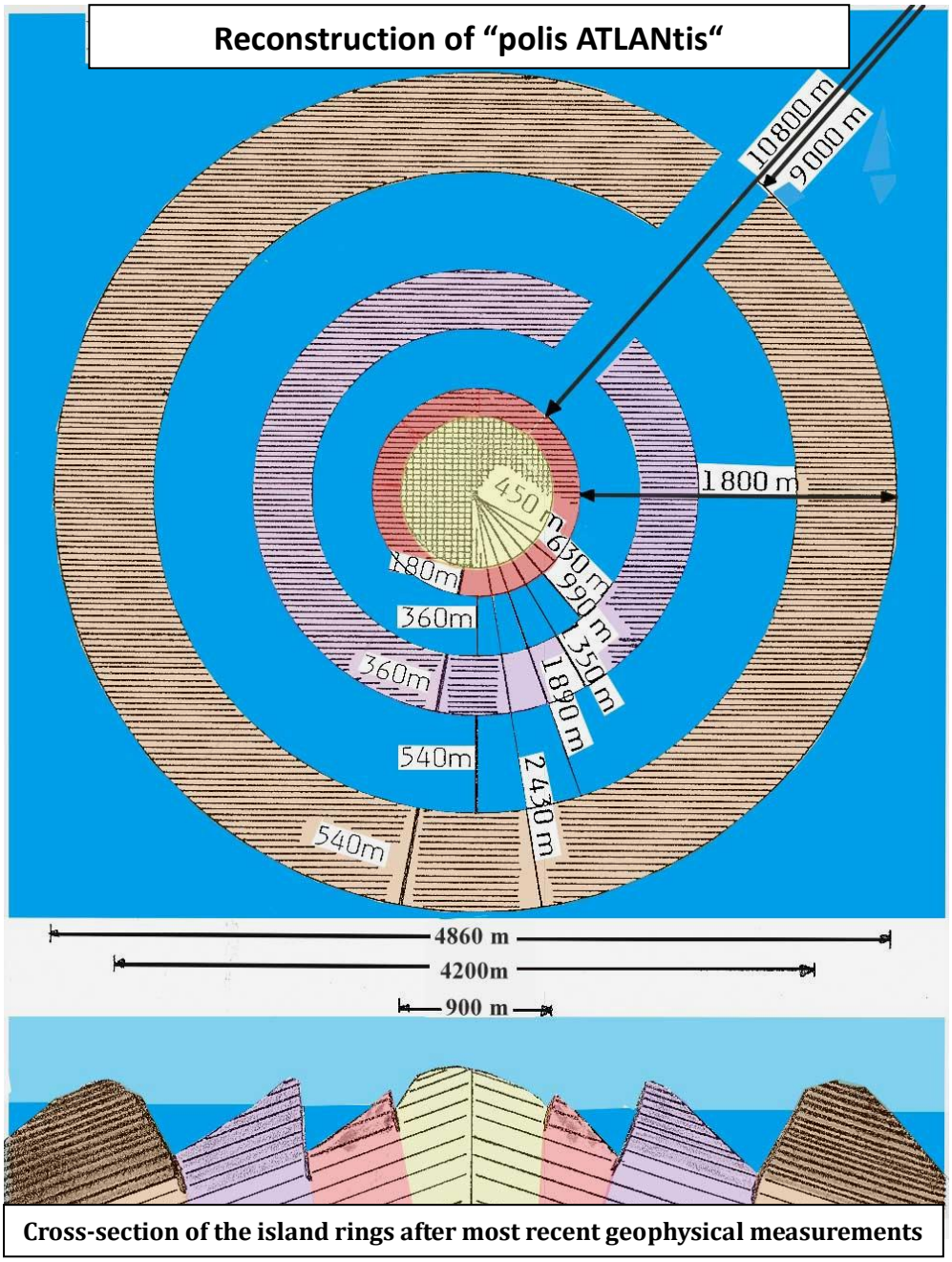

Figure 5. Schematic Dimensions of Atlantis and the Proposed Volcanic Structure

Image Credit: Joachim Rittstieg

List of Tables

Greek measurements (used by Plato):

Linear measure:

100 feet = 1 pletron = 1 trimere

1 triere = 1 trireme = 1 ship width (= 100 feet)

6 x 1 pletron = 6 pletren = 1 stadium

Translation of the linear measures:

1 foot = 30 cm = 0.3 x 3.2809 ft = 0.98427 ft

Depth of the "Canal" to "polis ATLANtis":

100 feet = 30 m = 30 x 3.2809 ft = 98.427 ft

100 feet = 30 m = 30 x 1.0936 yards = 32.808 yards

1 pletron = 30 m = 30 x 1.0936 yards = 32.808 yards

Length of Poseidon's temple in "polis ATLANtis":

3 pletren = 90 m = 90 x 1.0936 yards = 98.424 yards

Length of the horse-race in "polis ATLANtis":

6 pletren = 180 m = 180x 1.0936 yards = 196.848 yards

1 stadium = 180 m = 180x 1.0936 yards = 196.848 yards

2 stadia = 360 m = 360x 1.0936 yards = 393.696 yards

3 stadia = 540 m = 540x 1.0936 yards = 590.554 yards

4 stadia = 720 m = 720x 1.0936 yards = 787.392 yards

Diameter of the central island:

5 stadia = 900 m = 900 x 1.0936 yards = 984.24 yards

Length of the "Canal" and of the bridge:

50 stadia = 9,000 m = 9 km = 9 x 0.621ms = 5.59242 miles

diameter of the island and the "rings" (= of the Lake Izabal):

2 x (2 ½ + 1+ 2 + 2 + 3 + 3 + 50) stadia = 22.860 km

= 22.860 x 0.621ms = 14.19606 miles

Length of the ATLAN valley:

2000 stadia = 360 km = 360 x 0.621miles = 238 miles

Length of the two (ATLAN) mountains each:

3000 stadia = 540 km = 540 x 0.621miles = 335.3 miles

Length of the peninsula (Yucatán):

10,000 stadia = 1.800 km =1.800 x 0.621 miles = 1178.8 miles

Surface measure:

1 los = 1 stadium x 1 stadium

1 kleros = 10 stadia x 10 stadia

1 kleros = 1.8 km x 1.8 km = 3.24 km²

= 3.24 x 0.3861 square mile = 1.250964 square miles

100 kleros = 1 plot of land = 125.0964 square miles

1 plot of land = 324 km² x 0.386 ≈ 125 square miles

Arable area of Plato's continent:

60,000 plots of land = 19.440 Mio km² of arable land =

19,440,000 x 0.3861 square mile = 7,505.784 square miles

Total area of PLato's continent:

Arable area + (deserts, lakes, mountains etc)

Table 1. Approximate Conversion of Greek Linear Measurements Used in Plato's Time

Conversion of stadia, plethra, and feet into modern metric units.

Image Credit: Joachim Rittstieg

Final Note

Scientific progress is achieved not by proving hypotheses correct, but by testing them rigorously against observable evidence. The Lake Izabal hypothesis should therefore be regarded not as a final answer to the Atlantis question, but as a geographical model open to future archaeological, geological, and historical verification.

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Abbreviations

Cu — Copper

$CuNi_2As_2$ — Copper–Nickel–Arsenide

GIS — Geographic Information System

GPS — Global Positioning System

LiDAR — Light Detection and Ranging

MSL — Mean Sea Level

UNESCO — United Nations Educational, Scientific and Cultural Organization

Glossary

Bathymetry

The measurement and mapping of underwater topography.

Caldera

A large volcanic depression formed after the collapse of a magma chamber.

Fault

A fracture within the Earth's crust along which movement has occurred.

Geophysics

The scientific investigation of the Earth's physical properties using methods such as seismic, magnetic and gravity measurements.

GIS

Computer-based systems used to analyse and visualize geographic information.

LiDAR

Laser-based remote sensing technology capable of producing highly accurate digital terrain models.

Oreichalcum (Orichalcum)

Ancient metal described by Plato; interpreted in this study as a copper-nickel-arsenide alloy hypothesis.

Plate Tectonics

The theory describing the movement of the Earth's lithospheric plates.

Stadion (plural: stadia)

Ancient Greek unit of length. For this study, approximately 180 meters are assumed.

Subsidence

The downward movement of the Earth's surface caused by tectonic or sedimentary processes.

Tectonics

The geological processes responsible for deformation of the Earth's crust.

Appendix A

Conversion of Ancient Measurements

Greek Unit	Approximate Metric Equivalent
1 foot	30 cm
1 plethron	30 m
1 stadion	180 m

Appendix B

Principal Geographic Measurements Used in this Study

- Plain: 2,000 × 3,000 stadia
- Canal: 50 stadia
- Distance from sea: 60 stadia
- Central basin: approximately 23 km
- Mountain range: approximately 3,000 stadia

Back Cover

For more than two thousand years, the location of Plato's Atlantis has remained one of the most enduring questions in historical geography. Numerous hypotheses have been proposed, yet most focus on only a limited number of features contained in Plato's account.

This study adopts a different methodological approach. Rather than beginning with a preferred location, it systematically examines the complete set of measurable geographical, topographical, and dimensional criteria described in *Timaeus* and *Critias*. Ancient measurements are converted into modern metric units and compared with contemporary topographic, geological, and geophysical data.

The analysis identifies the Lake Izabal region of Guatemala as a geographical setting that satisfies an unusually large number of Plato's reported criteria simultaneously, including the dimensions of the surrounding plain, adjacent mountain systems, navigable waterways, inland basins, and the proposed location of the capital.

The study does **not** claim to prove the historical existence of Atlantis. Instead, it presents the Lake Izabal hypothesis as a geographically plausible research model that merits further interdisciplinary investigation through archaeology, geology, geophysics, and historical research.

By emphasizing measurable evidence and transparent methodology, this work offers a new perspective on one of antiquity's most enduring historical mysteries.